Paper No. 54

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK SQUIBB

Appeal No. 1999-2714
Application No. 08/504,562

HEARD: Aug. 21, 2003[1]

Before BARRETT, FLEMING, and DIXON, **Administrative Patent Judges**.

DIXON, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 50-127, which are all of the claims pending in this application.

We REVERSE.

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[1] Appellant presented an interpretative handout for comparison of the present invention versus Metzner and Queen. We attached a copy to the decision for the record.

The appellant's invention relates to a file difference engine. An understanding of the invention can be derived from a reading of exemplary claims 50, 72, 84, and 101, which are reproduced below.

> 50. A combination comprising a storage device, a file stored in said storage device, and a token table stored in said storage device, said token table comprising first and second different hashing mathematical representations for each of a plurality of fixed equal length character segments of said file.
>
> 72. A combination comprising a memory, a signature and a first data file stored in said memory, said signature indicating a difference between said first data file and a second data file with respect to one another, said first and second data files each having successive segments of an equal number of characters and having a reference point at the same character position in both of said first and second data files, said signature comprising a plurality of offsets for said second data file, each offset representing the distance from said reference point in said second data file of a respective segment of said successive segments in said second data file, which is identical to one of said segments in said first data file, the distance from said reference point being the distance of a fixed character position within each respective segment from said reference point.
>
> 84. A method for creating a second window segment token from a base window segment token, said method comprising creating a base window segment in a computer memory by reading a segment of a file in a computer memory, said segment in said file being of the same size as said base window segment, calculating an exclusive-or signature that is an exclusive-or representation of the characters of said base window segment of the file to create a base window segment token, creating said second window segment which comprises all characters of said base window segment except the first character of said base window segment and comprises the next character in said file after said segment in said file which was read to form the base window segment by reading said next

character in said file, and creating a second window segment token for said second window segment by adjusting the base window segment token to reflect the deletion of the first character of said base window segment and the addition of said next character in said file in forming the second window segment.

101. A method for producing a token table from a computer data file in a memory media, the method comprising, for each of a plurality of fixed length segments in the data file, the steps of:

(a) generating a first hashing representation for the segment;

(b) generating a second hashing representation for the segment; and

(c) concatenating said first and second hashing representations into a segment representation.

The prior art of record relied upon by the examiner in rejecting the appealed claims are as follows:

Queen 4,807,182 Feb. 21, 1989

Metzner, J.J., "A parity Structure for Large Remotely Located Replicated Data Files," IEEE Transactions on Computers, pp. 727-730, Vol. C-32, No. 8, Aug. 1983.

Claims 50-56, 72-74, 85, 86, 109-111, 126, and 127 stand rejected under

35 U.S.C. § 101 as being directed to nonstatutory subject matter.[2] Claims 50-125 stand rejected under obvious-type double patenting. Claims 101-108, 110, 117 and 118 stand rejected under 35 U.S.C. § 112, first paragraph, for not being supported by the disclosure. Claims 124 and 125 stand rejected under 35 U.S.C. § 112, second paragraph, as failing to distinctly claim and particularly point out the invention. Claims 50-70, 109, 111, 113-116, and 124-129 stand rejected under 35 U.S.C. § 102 as being anticipated by Metzner. Claims 71-100, 112, and 119-123 stand rejected under 35 U.S.C. § 103 as being unpatentable over Metzner in view of Queen.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 34, mailed Apr. 17, 2002) for the examiner's reasoning in support of the rejections, and to the appellant's brief (Paper No. 27, filed Jun. 22, 1998), first reply brief (Paper No. 29, filed Dec. 31, 1998) and second reply brief (Paper No. 35, filed Jun. 24, 2002) for the appellant's arguments there against.

OPINION

[2] We note that the examiner has not rejected claim 96 under this rejection, and we note that there is no memory medium or apparatus to embody the methodology. Appellant's filed a supplemental brief after the oral hearing (Paper No. 54, filed Aug. 28, 2002) to address the panel's question at the hearing whether independent claim 96 was directed to statutory subject matter. Appellant's representative requested a one week period to submit a response. In light of the numerous definitions of the term "file" and a showing of corresponding usage in the specification in accordance with these definitions in the computer related technologies, we withdraw our question with respect to claim 96.

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

At the outset, we note that the examiner's answer is quite unclear as to the appropriate grounds of rejection of the claims in each of the grounds of the rejection along with which claims (some are not listed in the statement of the rejections, but addressed in the body of the rejection) are rejected over which reference(s). Rather than remand the application again to the examiner after the oral hearing, we will address the rejections using appellant's brief and the reply brief as a guide to conclude that the examiner has not established a ***prima facie*** case for any of the stated grounds of rejection.

STATUTORY SUBJECT MATTER

The examiner maintains that the claims are directed to non-statutory subject matter as being non-functional descriptive matter which are stored on a storage medium or the like. (See answer at page 3.) The examiner maintains that the non-functional descriptive matter "cannot exhibit any functional interrelationship with the way in which computing processes are performed." (See answer at page 3.) Appellant argues in the second reply that the claims are similar to the claims in **In re Lowry**, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994), and that in accordance with **State Street Bank &Trust**

Co. v Signature Financial Group, Inc, 149 F.3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998), Cert. denied, 119 S. Ct. 851 (1999) and **AT&T Corp. v. Excel Communications, Inc.**, 172 F.3d 1352, 50 USPQ2d 1447 (Fed. Cir. 1999), the present data structures recited in the claims are clearly functionally interrelated in the computing process and that the structures are not merely non-functional data. (See second reply brief at pages 7-9.) We agree with appellant that the recited claim limitations in the rejected claims are directed to "a useful, concrete and tangible result" wherein the data stored in the memory or in the computer is more than mere non-functional descriptive material, and it is stored on some tangible medium so as to be more than an abstract idea. Therefore, we will not sustain the examiner's rejection under non-statutory subject matter.

DOUBLE PATENTING

Appellant argues that appellant filed a terminal disclaimer (TD) with the second reply brief and the file jacket indicated that the TD has been entered, processed and the TD indicated on the file jacket. Therefore, we deem this rejection to be overcome. Alternatively, we do not find that the examiner has provided the requisite analysis in the answer to properly set forth a ***prima facie*** rejection under obvious-type double patenting.

35 USC § 112, FIRST PARAGRAPH

With respect to the rejection under 35 USC § 112, first paragraph, we are unclear of the examiner's basis for the rejection at page 4 of the answer.[3] The examiner states that the specification is objected to "as failing to adequately teach how to make and/or use the invention; e.g. failing to provide an enabling disclosure." We find this to be a rejection based upon enablement, but we do not find any discussion as to why one skilled in the art would not be able to make and use the claimed concatenation of the two representations. From our understanding of the claimed invention, we find no explanation of why the two codes may not be concatenated together as a single representation. We find that claims 101-107 teach various steps for carrying out the concatenation process. We find the recited claims to be enabled on their face and do not find any analysis by the examiner of what additional disclosure would be necessary to enable the rejected claims. We reach a similar conclusion with respect to independent claim 108 and dependent claim 110. We find no discussion of concatenation in claims 111, 112, 117, or 118 and therefore, do not address these claims.

35 USC § 112, SECOND PARAGRAPH

[3] The examiner lists claims 101-108, 110 and 117-118 in the first line of the rejection, then concludes listing claims 101-112. We will limit or review to the claims specifically addressed by the examiner.

With respect to claims 124 and 125, the examiner has rejected the claims based upon a lack of antecedent basis for "the segment." (See answer at page 4.) We disagree with the examiner and find that the preamble provides a proper antecedent basis by reciting "for each of a plurality of fixed length segments in the data file, the steps of . . . ." (Emphasis added.) Since "the segment" in steps (a) and (b) refer to each segment, we find that a proper antecedent basis is recited in the preamble, and we will not sustain the rejection of claims 124 and 125 under 35 USC § 112, second paragraph.

35 USC §§ 102 and 103

We note that appellant has provided a grouping of the claims and a summary description of the claimed subject matter at page 6 of the brief. We will address the rejection using this grouping as a guide because of the noted difficulty we have in determining which claims the examiner has rejected and under what statutory basis and references which will be noted below.

Appellant argues that Metzner does not describe a structure having two mathematical representations for each of a number of fixed length segments in a file. (See brief at page 14.) Appellant argues that Metzner teaches only a single representation of each of a number of equal length pages. (See brief at page 14.) We agree with appellant. The examiner maintains that each level or layer in Metzner is a new representation of the bottom string, that each segment of fixed length within each layer, that exclusive-or and polynomial representation are disclosed and that the bottom

layer is a binary representation and higher levels are exclusive-or representations. (See answer at page 17.) While we agree with all of the examiner's statements, we find that the examiner has not addressed the language of the claims which recite " first and second different hashing mathematical representations for each of a plurality of fixed equal length character segments of said file." Here, each representation must be of each of a plurality of fixed equal length character segments of said file. Therefore, the segments must be the same and of equal length and the examiner's use of different layers of for the two representations is unreasonable. Therefore, we will not sustain the examiner rejection under 35 USC § 102 directed to the use of two representations. Since, Metzner does not teach the use of two representations of the raw data in each of a plurality of fixed equal length character segments of said file, we cannot sustain the rejection of independent claims 50, 57, 63, 109, 113 and 124 and their dependent claims 51-56, 58-62, 111, 114-116, 125-129 under 35 USC § 102.

The examiner does not list out claims 92 and 95-100 in the statement of the rejection, but discusses these claims at pages 7-8 of the answer. The examiner maintains that Metzner teaches the use of an offset as recited in independent claim 92 , at page 728, but we find no such teaching of the use of an offset in Metzner.[4] We are under the impression that these claims should have been included under 35 USC § 103

[4] With respect to dependent claim 95, we do not find that the examiner has rejected the intermediate dependent claims 93 and 94 under the same grounds of rejection.

over the combination of Metzner and Queen since the examiner mentions both references when addressing claim 95.

The examiner does not list out claims 101-108, 110, 117 in the statement of the rejection, but discusses these claims at page 9 of the answer with respect to an obviousness rejection, but not with respect to anticipation. Therefore, we cannot sustain a rejection under anticipation.

Therefore, we will not sustain the rejection of claims in appellant's groups 1, 2, 6, and 8-13 (brief at page 6) under 35 USC § 102 over Metzner alone.

35 USC § 103

With respect to the examiner's alternative rejection of the above claims under 35 USC § 103, the examiner appears to base the rejection of various dependent claims under 35 USC § 103 with respect to the indexing items of data or segments. (See answer at page 8.) While this may true, the examiner has not set forth the analysis under 35 USC § 103 for the independent claims.

Appellant argues that Metzner does not explain to one skilled in the art anyway to resynchronize the file comparison process if the data is skewed whereas the use of two representations for each segment can serve as a means to determine matching when skewing has occurred. Appellant argues that one skilled in the computer science field would have no motivation from Metzner (alone) to develop methods and structures wherein each of the plurality of segments has two representations. (See brief at page

15.) We agree with appellant, and find that the examiner only addresses this argument with respect to the combination of Metzner and Queen at page 21 of the answer. Therefore, we will not sustain the examiner's alternative rejection of the above claims under 35 USC § 103 over Metzner alone. Therefore, we will not sustain the rejection of claims in appellant's groups 1, 2, 6, and 8-13 under 35 USC § 103 over Metzner alone.

With respect to the rejection under 35 USC § 103 over the combination of Metzner and Queen, the examiner maintains that Metzner does not disclose generating offsets of identical segments in the second file, but that Queen teaches generating offsets of characters from a first file to a second file. From our review of Queen, we do not agree with the examiner that Queen teaches "offsets" as recited in the claims.[5]

With respect to the use of offsets, appellant argues that the identity blocks of Queen are not of a fixed length as with Metzner, but are of a variable length by first generating anchorpoints and then expanding outwardly from the anchorpoints while comparing the characters until different characters are found. (See brief at page 16.) We agree with appellant. Appellant argues that in Metzner there is no need to store an offset since the pages always begin at the same address and that Queen would have provided no motivation to store location of offset due to fixed length segments and use of the same start address. (See brief at page 17.) Appellant argues that therefore, the

[5] Here, we note that the examiner has rejected claims 71-100, but has not rejected claim 69 from which claim 71 depends and claim 69 defines the "offset." Additionally , independent claim 72 contains the same definition as claim 69.

examiner has relied upon improper hindsight in an attempt to reconstruct the claimed invention. (See brief at page 17.) We agree with appellant. The examiner disagrees with appellant's position and maintains that "the combination of references shows indicating the location of fixed length blocks." (See answer at page 18.) We disagree with the examiner and do not find that the examiner has provided a convincing analysis or line of reasoning to reach this conclusion.

The examiner maintains that appellant is basing the arguments on the bodily incorporation of the teachings of Queen into Metzner, and that this is improper. (See answer at page 23.) While the examiner appears to interpret appellant's arguments in this manner, appellant appears to be arguing that the methodologies of Metzner and Queen are very different and that it would not have been obvious to one of ordinary skill in the art to have been motivated to look to the teachings of Queen starting from the teachings of Metzner. The examiner maintains that the alleged deficiency of Queen is not material to the claims (See answer at page 22), but does not explain why. The examiner then maintains that the combination of Metzner and Queen meets each and every limitation in the claims. We disagree with the examiner's conclusion and find that the examiner appears to miss the distinction between using fixed length segments for making the mathematical representations and the use of variable length representations and recognition during a comparison. Therefore, we agree with appellant that the examiner has not set forth a ***prima facie*** case of obviousness with respect to the claims

reciting an offset, specifically, appellant's groups 2, 3, and 4 (claims 69-71, 75-77, 92-95, 115, 116, 123, 72-74, 78-81, 82, 83, 85 and 86.)

With respect to the generation of a second window segment token for each changed window, the examiner maintains that Queen teaches the creation of the second window segment by adjusting the base window segment token to reflect the deletion of the first character of the base window segment and the addition of the next character in the file forming the second window segment. (See answer at page 14.) We disagree with the examiner's interpretation of Queen at column 6 which is relied upon by the examiner. Claim 84 states:

> A method for creating a second window segment token from a base window segment token, said method comprising creating a base window segment in a computer memory by reading a segment of a file in a computer memory, said segment in said file being of the same size as said base window segment, calculating an exclusive-or signature that is an exclusive-or representation of the characters of said base window segment of the file to create a base window segment token, creating said second window segment which comprises all characters of said base window segment except the first character of said base window segment and comprises the next character in said file after said segment in said file which was read to form the base window segment by reading said next character in said file, and creating a second window segment token for said second window segment by adjusting the base window segment token to reflect the deletion of the first character of said base window segment and the addition of said next character in said file in forming the second window segment.

While Queen finds identity between the two by a character by character comparison and the combination of Metzner and Queen would similarly require a move

of the page which would change all of the parity in the parity hierarchy. Here the language of claim 84 recites "creating a second window segment token for said second window segment by adjusting the base window segment token to reflect the" change where the token is adjusted in order to create a new segment token. (See brief at page 19.) We do not find that Queen teaches or fairly suggests the creation of this token in this manner. Therefore, we find that the examiner has not established a ***prima facie*** case of obviousness and we cannot sustain the rejection of claim 84 and the claims in appellant's groups 5 and 8.

Although the examiner did not specifically list claims 101-108, 110, 117 and 118 in either of the 102 and 103 rejections, but discussed them in the body of the rejections, we do not find that the examiner has made a ***prima facie*** case of anticipation or obviousness, and we will not sustain a rejection thereof as discussed by the examiner.

CONCLUSION

To summarize, the decision of the examiner to reject claims 50-56, 72-74, 85-86, 109-111 and 126-127 under 35 U.S.C. § 101 is reversed; the decision of the examiner to reject claims 50-125 under obvious type double patenting is reversed; the decision of the examiner to reject claims 101-108, 110, 117-118 under 35 U.S.C. § 112, first paragraph is reversed; the decision of the examiner to reject claims 124 and 125 under 35 U.S.C. § 112, second paragraph is reversed; the decision of the examiner to reject claims 50-70,

109, 111,113-116, and 124-125 under 35 U.S.C. § 102/103 is reversed; and the decision of the examiner to reject claims 71-100, 112, and 119-123 under 35 U.S.C. § 103 is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

REVERSED

LEE E. BARRETT Administrative Patent Judge	)
MICHAEL R. FLEMING Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
JOSEPH L. DIXON Administrative Patent Judge	)

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